

Application Serial No. 09/478,849
Amendment Dated 26 September 2005
Response to Office Action mailed on 26 May 2005

Docket No. CIC-037-US

Remarks

Applicant respectfully requests reconsideration of the instant application in view of the above amendments and the following remarks.

Surrender of Original Patent

Applicant respectfully requests that the Examiner vacate/withdraw the requirement to surrender the original patent or submit a declaration as to loss or inaccessibility thereof, in view of the amendment to 37 CFR § 1.178 per the Federal Register, Vol. 69, No. 182, September 21, 2004, pp. 56521-56522.

Specification

The specification has been amended as follows:

on column/page 6, at lines 47-48 to replace "light scattering" with --light-scattering-- so as to provide for a consistent reference in the specification and claims to "light-scattering" as a hyphenated word;

on column/page 6, at line 65 to replace "than" with --then-- so as to correct a grammatical error;

on column/page 8, at lines 25-26 to replace "accommodate" with --correct for-- so as to improve clarity; and

on column/page 8, at lines 60-61 to replace "scattering screen" with --light-scattering screen-- so as to provide for a consistent reference in the specification and claims to "light-scattering screen".

Applicant respectfully submits that no new matter has been added by this amendment.

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Claims

Summary of Claim Status

Claims 1-43 and 46-87 are pending in the application.

Claims 32-43, 57-69, 72-73 and 76-77 stand rejected under 35 U.S.C. §103(a), as being unpatentable over Wood (U.S. Patent No. 4,669,810) in view of Kato et al. (U.S. Patent No. 5,817,597) and Opittek et al. (U.S. Patent No. 3,915,548).

Claim 78 stands objected to because of the informality “wherein and said” on line 5. Claim 78 has been amended at line 5 to replace “wherein and said” with --wherein said--, thereby rectifying the informality.

Claims 1-31, 46-56, 70-71, 74-75 and 78-87 stand allowed.

Summary of Claim Amendments

Claims 32, 33, 57, 58, 65, and 66 have each been amended to replace “light redistributing screen” with --light-scattering screen--, as supported by the specification on page/column 2 at lines 14-15; on page/column 6 at lines 47-52 and 64-66; on page/column 7 at lines 19-21 and 35-55; and on page/column 8 at lines 11-21 and 44-46. Associated with these changes, claims 32, 33 and 66 have also been amended to improve clarity. The amendments to claims 32, 33, 57, 58, 65, and 66 relative to the previous version thereof are indicated as follows, with additions underlined and deletions shown with strikethrough format:

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32. (amended four times) An optical system, comprising:

- a. a modulated scanning beam of light for forming an intermediate image;
- b. a light redistributing means positioned proximate to said intermediate image for expanding a cone of light from said modulated scanning beam of light incident on said light redistributing means into a larger cone of exodus, wherein said light redistributing means comprises a light-scattering redistributing screen with a scanning modulated beam of light, wherein and said light-scattering redistributing screen redistributes light from said beam of light of said intermediate image; and
- c. a re-imaging means for re-imaging said intermediate image so as to form a virtual image, wherein said re-imaging means forms an exit pupil.

33. (thrice amended) An optical system, comprising:

- a. a modulated scanning beam of light for forming an intermediate image;
- b. a means for re-imaging said intermediate image so as to form a virtual image, wherein said means for re-imaging said intermediate image forms an exit pupil; and
- c. a light redistributing means positioned proximate to said intermediate image for expanding said exit pupil, wherein said light redistributing means comprises a light-scattering redistributing screen with a scanning modulated beam of light, wherein and said light-scattering redistributing screen redistributes light from said beam of light of said intermediate image.

57. (once amended) A method of generating an image, comprising:

- a. forming an intermediate image on a light-scattering redistributing screen with a scanning modulated beam of light, wherein said light-scattering redistributing screen redistributes light from said beam of light of said intermediate image; and
- b. re-imaging said light redistributed from said light-scattering redistributing screen so as to form an image of said intermediate image.

58. (once amended) A method of generating an image as recited in claim 57, wherein said light-scattering redistributing screen comprises a curved surface.

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65. (once amended) A method of generating an image as recited in claim 57, further comprising the operation of converging said light redistributed from said light-scattering redistributing screen prior to re-imaging said light.
66. (twice amended) An optical system, comprising:
- a scanning modulated beam of light;
 - a projection surface comprising a light redistributing means, wherein an intensity of said beam of light is modulated to form an intermediate image on said projection surface, wherein said light redistributing means comprises a light-scattering redistributing screen with a scanning modulated beam of light, wherein and said light-scattering redistributing screen redistributes light from said beam of light of said intermediate image; and
 - a re-imaging means, wherein said re-imaging means forms a virtual image of said intermediate image from light from said projection surface through an exit pupil viewable by an eye.

Claims 42, 43 and 62 have been rewritten in independent form, including all of the limitations of the associated originally filed base claims and any intervening claims, including the amendments of claims 43 at 43 on 16 January 2001 to replace "third aberration" with - aberration-- for two occurrences at line 2 of each claim, and a present amendment at line 3 of claim 42 to replace "means for re-imaging" with --re-imaging means-- so as to provide for proper antecedent basis thereof.

Claim 69 has been amended as follows at line 2 to replace "is located at a distance" with - originates at an optical distance--, as supported by the specification on page/column 7 at lines 65-67, and by FIG. 4 of the drawings:

69. (once amended) An optical system as recited in claim 66, wherein said projection surface is curved and said scanning modulated beam of light is located originates at an optical distance approximately equal to a radius of curvature of said projection surface.

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Claim 78 has been amended at line 5 to replace "wherein and said" with --wherein said--, so as to rectify the grammatical error noted by an objected to by the Examiner.

Claim Rejections Under 35 U.S.C. §103(a) over Wood in view of Kato et al. and Opittek et al.

Claims 32-43, 57-69, 72-73 and 76-77 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Wood (U.S. Patent No. 4,669,810) in view of Kato et al. (U.S. Patent No. 5,817,597) and Opittek et al. (U.S. Patent No. 3,915,548).

Regarding claims 32, 33, 57, 66, claims 32, 33, 57 and 66 have each been amended to replace "light redistributing screen" with --light-scattering screen--. Applicant respectfully submits that neither Wood, Kato et al., nor Opittek et al., alone or in combination, disclose a light-scattering screen in accordance with claims 32, 33, 57 and 66, as disclosed in the instant application.

Wood discloses a reflecting element 28 that desirably comprises a holographic element, and which, as best understood, acts as a lens-like element that provides for a one-to-one relationship between light rays entering and exiting the reflecting element 28. As distinguished from Wood, the light-scattering screen in accordance with claims 32, 33, 57 and 66 provides for redistributing light impinging thereupon and provides for a one-to-many relationship between light rays entering and exiting the light-scattering screen. Notwithstanding this one-to-many relationship of the light-scattering screen, the instant invention provides for re-imaging the light from the intermediate image that is redistributed by the light-scattering screen if the intermediate image is located at least proximate to the light-scattering screen. Applicant respectfully submits that one-of-ordinary skill in the art would be dissuaded from replacing the reflecting element 28 of Wood with a light-scattering screen because of this limitation. Furthermore, as best understood, Kato et al. discloses the curved surface 10' of the embodiment of Fig. 9 to incorporate a reflection-type hologram 4, rather than a light-scattering screen. Applicant respectfully submits that a hologram provides for diffracting light rather than scattering light. Yet further, as best understood, Opittek et al. discloses a holographic lens/combiner 20 rather than a light-scattering screen. Accordingly, as best understood, neither Wood, Kato et al. nor Opittek et al., either individually or in combination, provide any suggestion to replace the holographic element with a light-scattering screen.

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Because neither Wood, Kato et al. nor Opittek et al., alone or in combination, disclose or suggest all of the limitations of either claims 32, 33, 57 or 66, then Applicant respectfully submits that claims 32, 33, 57 and 66 are non-obvious with respect to Wood, Kato et al. and Opittek et al., alone or in combination, and therefore in a condition for allowance. Applicant respectfully requests reconsideration and allowance of amended claims 32, 33, 57 and 66.

Claims 34/32, 35/33, 36/32, 37/33, 38/32, 39/33, 40/32, 41/33, 58/57, 59/58/57, 60/57, 61/59/58/57, 63/57, 64/57, 65/57, 67/66, 68/66, 69/66, 72/66, 73/72/66, 76/32 and 77/33 each depend upon one of claims 32, 33, 57 or 66. Accordingly, Applicant respectfully submits that if the above argument regarding the non-obviousness of claims 32, 33, 57 and 66 is accepted, then claims 34-41, 58-61, 63-65, 67-69, 72-73 and 76-77 are also non-obvious with respect to Wood in view of Kato et al., and Opittek et al., because the addition of further limitations to an already novel and non-obvious claim does not negate non-obviousness when at least one element or limitation in the base claim is not present in the prior art. Applicant requests reconsideration and allowance of claims 34-41, 58-61, 63-65, 67-69, 72-73 and 76-77 in view of the above argument and the amendments submitted herewith.

Regarding claims 42 and 43. Applicant respectfully submits that neither Wood, Kato et al. nor Opittek et al., alone or in combination, disclose or suggest, *inter alia*, a re-imaging means or a means for re-imaging an intermediate image, wherein the intermediate image comprises at least one aberration, and at least one said at least one aberration is substantially canceled by the re-imaging means or the means for re-imaging. Applicant respectfully directs the Examiner's attention to allowable claims 1, 4, 10, 11, 13, 14, 15, 16, 29, 31, 47, 53, 54, 71, 78, and 84 which incorporate similar limitations. Because neither Wood, Kato et al. nor Opittek et al., alone or in combination, disclose or suggest all of the limitations of either claims 42 or 43, then Applicant respectfully submits that claims 42 and 43 are non-obvious with respect to Wood, Kato et al. and Opittek et al., alone or in combination, and therefore in a condition for allowance. Applicant respectfully requests reconsideration and allowance of amended claims 42 and 43.

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Regarding claim 62, Applicant respectfully submits that neither Wood, Kato et al. nor Opittek et al., alone or in combination, disclose or suggest, *inter alia*, the operation of forming an intermediate image comprises scanning each of a plurality of colors, and each color is scanned so as to pre-correct for chromatic aberration by the operation of re-imaging. Applicant respectfully directs the Examiner's attention to allowable claims 71, 78, and 84 which incorporate similar limitations. Because neither Wood, Kato et al. nor Opittek et al., alone or in combination, disclose or suggest all of the limitations of claim 62, then Applicant respectfully submits that claim 62 is non-obvious with respect to Wood, Kato et al. and Opittek et al., alone or in combination, and therefore in a condition for allowance. Applicant respectfully requests reconsideration and allowance of amended claim 62.

Extension of Time and Payment of Fees Under 37 C.F.R § 1.17(a)(1)

Applicant hereby petitions for a One-Month Extension of Time, pursuant to 37 C.F.R. §1.136, extending the deadline for response up to and including September 26, 2005. A Credit Card Payment Form in the amount of \$720 is enclosed which includes payment of \$120 for the associated One-Month Extension of Time fee pursuant to 37 C.F.R. §1.17(a)(1).

Payment of Fees under 37 C.F.R §§ 1.16(h)

This amendment converts three (3) dependent claims (42, 43 and 62) to independent form, resulting in a total of eighty-seven (87) claims and fifteen (15) independent claims. As a result of this amendment, there are now three (3) independent claims in excess of twenty beyond those for which payment has already been made, which at a cost of \$200 each in accordance with 37 C.F.R. § 1.16(h) results in a subtotal of \$600 of excess independent claims fees. The Credit Card Payment Form in the amount of \$720 enclosed herewith includes payment of \$600 for the associated excess claims fee pursuant to 37 C.F.R. 1.16(h).

Authorization to Charge Fee Deficiencies

The Commissioner is authorized to charge any deficiencies -- that cannot be corrected by amendment of the Credit Card Payment Form -- to Deposit Account 04-1131.

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Summary and Conclusions

The specification has been amended to correct a grammatical error, and to improve clarity and consistency. Claims 32, 33, 57 and 66 have been amended to distinguish over the prior art. Claims 32, 33 and 66 have also been amended to improve clarity. Claims 42, 43 and 62 have been rewritten in independent form including all of the limitations of the original base claims and any intervening claims; and the rejections thereof have been traversed. Claims 58 and 65 have been amended to provide for proper antecedent basis in view of the amendments to claim 57. Claim 69 has been amended to improve clarity. Claim 78 has been amended to correct a grammatical error. Applicant respectfully submits that no new matter has been added by this amendment.

Applicant respectfully requests reconsideration of the instant application as amended herein in view of the arguments hereinabove. Applicant respectfully submits that the instant application is now in the proper form for Notice of Allowance.

Respectfully Submitted,



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